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EXAMINER

NAHAR, QAMRUN

ART UNIT PAPER NUMBER

2191

DATE MAILED: 10/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/086,939

Applicant(s)

ZORC, SAMO

Examiner

Qamrun Nahar

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6-17 and 19-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-17 and 19-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

PS

### DETAILED ACTION

1. This action is in response to the amendment filed on 07/15/2005.
2. The objection to the specification is withdrawn in view of applicant's amendment.
3. The rejection under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention to claims 2, 5, and 15 is withdrawn in view of applicant's amendment.
4. The rejection under 35 U.S.C. 102(e) as being anticipated by Saulpaugh et al (U.S. 6,792,466) to claims 1-4, 6, 11-12, 17 and 22-30 is moot in view of applicant's amendment and remarks/arguments.
5. The rejection under 35 U.S.C. 103(a) as being unpatentable over Saulpaugh et al (U.S. 6,792,466) in view of Hayes-Roth (U.S. 6,031,549) to claims 5, 13-14, and 18-21 is moot in view of applicant's amendment and remarks/arguments.
6. The rejection under 35 U.S.C. 103(a) as being unpatentable over Saulpaugh et al (U.S. 6,792,466) in view of Hayes-Roth (U.S. 6,031,549), and further in view of Coden (U.S. 6,341,277) to claims 7-10 and 16 is moot in view of new ground(s) of rejection.
7. Claims 1, 6-10, 15-17, 22-27 and 30 have been amended.
8. Claims 2, 5 and 18 have been canceled.
9. Claims 1, 3-4, 6-17 and 19-30 are pending.
10. Claims 6, 7, 13 and 14 are objected to because of informalities.
11. Claims 1, 3-4 and 6-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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12. Claims 1, 3-4, 6-17 and 19-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saulpaugh (U.S. 6,792,466) in view of Gupta (U.S. 6,513,059).

***Response to Amendment***

***Claim Objections***

13. Claims 6, 7, 13 and 14 are objected to because of the following informalities: they depend on canceled claims. Therefore, 6, 7, 13 and 14 are interpreted as depending on claim 1. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. Claims 1, 3-4 and 6-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the source object tree" in line 12 of the claim. There is insufficient antecedent basis for this limitation in the claim. Therefore, this limitation is interpreted as "the schema object tree".

Claims 3-4 and 6-16 are rejected for dependency upon rejected base claim 1 above.

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 1, 3-4, 6-17 and 19-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saulpaugh (U.S. 6,792,466) in view of Gupta (U.S. 6,513,059).

**Per Claim 1 (Amended):**

Saulpaugh teaches a method for automatically generating source code for manipulating at least one mark-up language message based on a mark-up language message definition, the method comprising: receiving the mark-up language message definition (“receives ... messages”, “messages ... XML” in column 7, lines 36-42); generating a first in-memory representation of the message definition based on the received message definition (“XML Schema” in column 17, lines 7-9); generating a second in-memory representation of a source code based on the first in-memory representation of the message definition (“code ... pre-generated for categories” in column 17, line 10), generating a second in-memory representation comprising generating a schema object tree that includes solutions; wherein the schema object tree includes one or more nodes; wherein the nodes of the schema object tree are the solutions (“code ... pre-generated for categories” in column 17, line 10; and “tree ... service advertised”, “service advertisement matching a particular XML schema” in column 41, lines 46-63; the nodes of the schema object tree represented by the pre-generated code are solutions); and generating

source files based on the second in-memory representation of the source code ("code generated from an XML Schema" in column 17, line 7-9).

Saulpaugh does not explicitly teach generating a schema object tree by employing a blackboard architecture that includes agents; wherein the nodes of the schema object tree are agents. Gupta teaches generating a schema object tree by employing a blackboard architecture that includes agents; wherein the nodes of the schema object tree are agents (column 6, lines 10-18).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Saulpaugh to include generating a schema object tree by employing a blackboard architecture that includes agents; wherein the nodes of the schema object tree are agents using the teaching of Gupta. The modification would be obvious because one of ordinary skill in the art would be motivated to be able to have agents work across different domains (Gupta, column 2, lines 16-28).

**Per Claim 3:**

The rejection of claim 1 is incorporated, and Saulpaugh further teaches wherein the first in-memory representation is a schema object tree corresponding to an XML Schema message definition; wherein the schema object tree includes one or more nodes ("tree ... service advertised", "service advertisement matching a particular XML schema" in column 41, lines 46-63).

**Per Claim 4:**

The rejection of claim 1 is incorporated, and Saulpaugh further teaches wherein the second in-memory representation includes one of class members, class methods, source file object nodes, class object nodes, and source file comment object nodes (“code ... pre-generated for categories (or classes)” in column 17, line 10).

**Per Claim 6 (Amended):**

The rejection of claim 1 is incorporated, and Saulpaugh further teaches wherein the second in-memory representation includes elements and attributes; wherein the generating source files based on the second in-memory representation of the source code comprises writing the elements and the attributes into respective Java class source files (“code ... pre-generated for categories (or classes)” in column 17, line 10).

**Per Claim 7 (Amended):**

The rejection of claim 1 is incorporated, and Gupta further teaches wherein the generating a source object tree by employing a blackboard architecture comprises performing context sensitive compilation while generating each node of the source object tree (column 5, lines 49-65).

**Per Claim 8 (Amended):**

The rejection of claim 7 is incorporated, and Gupta further teaches wherein the performing context sensitive compilation while generating each node of the source object tree comprises performing pre-fix processing (column 5, lines 49-65).

**Per Claim 9 (Amended):**

The rejection of claim 7 is incorporated, and Gupta further teaches wherein the performing context sensitive compilation while generating each node of the source object tree comprises performing in-fix processing (column 5, lines 49-65).

**Per Claim 10 (Amended):**

The rejection of claim 7 is incorporated, and Gupta further teaches wherein the performing context sensitive compilation while generating each node of the source object tree comprises performing post-fix processing (column 5, lines 49-65).

**Per Claim 11:**

The rejection of claim 1 is incorporated, and Saulpaugh further teaches wherein the mark-up language is XML (column 7, lines 36-42).

**Per Claim 12:**

The rejection of claim 1 is incorporated, and Saulpaugh further teaches wherein the mark-up language message definition is an XML schema message definition (column 41, lines 46-63).

**Per Claim 13:**

The rejection of claim 1 is incorporated, and Saulpaugh further teaches wherein the source code stores information included in at least one XML message (column 7, lines 36-42).



**Per Claim 14:**

The rejection of claim 1 is incorporated, and Saulpaugh further teaches wherein the source code manipulates information included in at least one XML message (column 7, lines 36-42).

**Per Claim 15 (Amended):**

The rejection of claim 1 is incorporated, and Saulpaugh further teaches wherein the method generates a communication API based on an XML schema definition (column 33, lines 10-11).

**Per Claim 16 (Amended):**

The rejection of claim 1 is incorporated, and Gupta further teaches automatically parsing context sensitive grammar in the compilation of XML schema to source code (column 5, lines 49-65).

**Per Claims 17 (Amended), 19-21:**

These are system versions of the claimed method discussed above (claims 1, 7, 6 and 12, respectively), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

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**Per Claim 22 (Amended):**

This is another version of the claimed method discussed above (claims 1 and 7), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, this claim is also obvious.

**Per Claim 23 (Amended):**

The rejection of claim 22 is incorporated, and Saulpaugh further teaches generating one or more source code files based on the second in-memory representation of source code ("code ... pre-generated for categories" in column 17, line 10; and "Java code" in column 2, lines 30-44).

**Per Claim 24 (Amended):**

The rejection of claim 22 is incorporated, and Saulpaugh further teaches reading a portion of a schema definition that corresponds to one or an element or an attribute from a schema definition file ("XML... arranged elements", "attributes" in column 33 lines 19-26; "... XML schema" in column 40 lines 21-32); constructing a schema object hierarchy based on the read portion ("... XML schema" in column 40 lines 21-32); compiling the object hierarchy into a source object hierarchy (Fig. 12 "schema 154 may be compiled"); and writing the source object hierarchy to one or more object-oriented source files ("Java code" in column 2, lines 30-44).

**Per Claim 25 (Amended):**

The rejection of claim 24 is incorporated, and Saulpaugh further teaches schema object hierarchy includes a plurality of objects; wherein each object includes code to compile itself into a source code primitive (Fig. 12 "schema 154 may be compiled").

**Per Claim 26 (Amended):**

The rejection of claim 24 is incorporated, and Saulpaugh further teaches source object hierarchy includes a set of objects that represent a predetermined class source file and that has a predetermined number of members, methods and definitions ("Java objects may include code (the object's methods) ..." in column 82, lines 18-64).

**Per Claim 27 (Amended):**

The rejection of claim 24 is incorporated, and Saulpaugh further teaches source object hierarchy includes an object corresponding to a whole source file, an object corresponding to a file declaration comment, an object corresponding to a package name, an object corresponding to import statements, and an object corresponding to class definitions ("Java class" in column 43, lines 54-61; and "Java code" in column 2, lines 30-44).

**Per Claim 28:**

The rejection of claim 27 is incorporated, and Saulpaugh further teaches the object for class definition includes one of an object corresponding to declaration statement, an object corresponding to specific class member definition, and an object corresponding to method

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definition (“Java class (XML types) ...”, “Types ... defined in XML ... usable in Java ... object oriented language” in column 43, line 54 to column 44, line 12).

**Per Claim 29:**

The rejection of claim 24 is incorporated, and Saulpaugh further teaches wherein each source object is programmed to write itself into a respective source file (Fig. 12 "schema 154 may be compiled"; and “Java code” in column 2, lines 30-44).

**Per Claim 30 (Amended):**

The rejection of claim 29 is incorporated, and Saulpaugh further teaches wherein each source object includes a toString( ) method that recursively calls toString( ) method of its descendents to write itself into a respective source file (“Using the string structures with the recursive processing...” in column 77, line 59 to column 78, lines 46).

***Response to Arguments***

18. Applicant's arguments with respect to claims 1, 3-4, 6-17 and 19-30 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

19. Any inquiry concerning this communication from the examiner should be directed to Qamrun Nahar whose telephone number is (571) 272-3730. The examiner can normally be reached on Mondays through Fridays from 9:30 AM to 6:00 PM.

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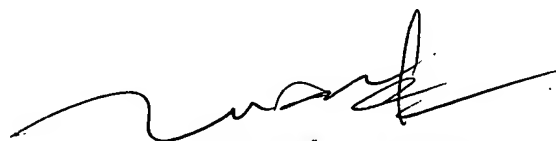
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam, can be reached on (571) 272-3695. The fax phone number for the organization where this application or processing is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



QN  
September 30, 2005



TUAN DAM  
SUPERVISORY PATENT EXAMINER